

REMARKS

This Preliminary Amendment is concurrently filed with a Request for Continued Examination for the above-identified patent application. In the Final Office Action of 3/3/2005, claims 14-21 were restricted and claims 2-13 were rejected. In this Preliminary Amendment, claims 3, 9, 10, and 15 have been canceled and new claims 22-24 have been added. Accordingly, claims 2, 4-8, 11-14, and 16-24 will be pending after entry of this Amendment.

I. Election/Restriction of Claims

In the Final Office Action, claims 2-13 (Invention I) were elected and claims 14-21 (Invention II) were restricted. The Examiner stated that Inventions I and II are related as process of making and product made and are independent and distinct inventions in that the process of making could be used for making semi-conductors and associated materials. Applicants hereby elect with traverse claims 2-13 and request reconsideration of the restriction of claims 14-21.

Under MPEP 806.05(f), a process of making and a product made by the process can be shown to be distinct inventions if either or both of the following situations can be shown: (A) that the process as claimed is not an obvious process of making the product and the process as claimed can be used to make other and different products; or (B) that the product as claimed can be made by another and materially different process. Applicants submit that neither situations (A) nor (B) exist in this case.

Situation (A) requires that the process as claimed is not an obvious process of making the product and the process as claimed can be used to make other and different products (emphasis added). Applicants submit that the neither of these prongs are met in regards to independent claims 2 (product) and 14 (process).

First, the process of making the MEMS product claimed in independent claim 14 *is* an obvious process of making the MEMS product claimed in independent claim 2. This is due to the

fact that the limitations of both claims 2 and 14 are nearly identical except for the differences in wording needed to accommodate the claim type (process or product) of each claim. For example, claim 2 recites a MEMS structure comprising a platform connected with a set of bimorph flexures, whereas independent claim 14 recites a method for fabricating a MEMS structure by forming a platform connected with a set of bimorph flexures.

Examination of each feature in each claim shows that each substantive feature in claim 2 is found in claim 14 and vice versa, and differences in wording between the two claims are caused by the different required claim formats of each claim. Surely if one of these claims were found in a prior reference it could be used in a 103 obviousness rejection against the other claim since both claims contain identical substantive features. As such, Applicants submit that the process of making the MEMS product claimed in independent claim 14 is, on its face, an obvious process of making the MEMS product claimed in independent claim 2.

Second, the process as claimed in claim 14 can not be used to make other and different products. If the process of claim 14 is followed, the process produces the MEMS structure of claim 2 and no other different products. Applicants respectfully request that the Examiner cite another product that can be produced using the process of claim 14 and how this product would differ from the product recited in claim 2.

Situation (B) requires that the product as claimed can be made by another and materially different process (emphasis added). Applicants submit that the MEMS product claimed in independent claim 2 can not be made by another materially different process from that claimed in independent claim 14. An analysis of each of the limitations of claims 2 and 14 show this is true.

For example, claim 2 recites a “platform connected with a set of one or more bimorph flexures.” Claim 14 recites “forming a platform connected with a set of one or more bimorph flexures.” There is no materially different process from claim 14 that can make the platform of claim 2. Regardless of the way another process may specifically use to make the platform (e.g.,

through etching, etc.), the platform must ultimately be formed, as required in claim 14. For there to be a process that is materially different than the process of claim 14 in producing the platform of claim 2, the other process can not form the platform. If the other process does not form the platform, the platform does not exist; if so, the other process does not make the platform (as required under MPEP 806.05(f)) and situation (B) does not apply.

A similar analysis can be applied to each of the steps of claim 14 since each such step comprises “forming” a particular component of the MEMS structure of claim 2. For example, claim 2 further recites that each bimorph flexure comprises “a first layer comprised of a first material.” Claim 14 further recites, for each bimorph flexure, “forming a first layer comprised of a first material.” For there to be a process that is materially different than the process of claim 14 in making the first layer of the bimorph flexure of claim 2, the other process can not form the first layer. If the other process does not form the first layer, the first layer does not exist; if so, the other process does not make the first layer (as required under MPEP 806.05(f)) and situation (B) does not apply.

For the above reasons, Applicants submit neither situations (A) nor (B) exist in this case and that claims 14-21 are not properly restricted under MPEP 806.05(f). As such, Applicants request reconsideration and withdrawal of the restriction requirement regarding these claims.

II. Rejection Under U.S.C. 102(b)

In the Final Office Action, claims 2-5, 8-10, and 13 were rejected under U.S.C. 102(b) as being anticipated by Miller et al. (U.S. Patent No. 6,759,787, hereinafter Miller). Claim 2 recites a microelectromechanical (MEMS) structure on a substrate, comprising:

a platform connected with a set of one or more bimorph flexures;

and

the set of bimorph flexures connecting the platform with the

substrate, each bimorph flexure comprising a first layer comprised of a first

material and a second layer comprised of a second material, the first and second materials having particular intrinsic residual stress (IRS) characteristics and coefficients of thermal expansion (CTEs), each bimorph flexure having a curvature resulting from a first component proportional to the difference in IRS characteristics of the first and second materials and a second component proportional to the difference in CTEs of the first and second materials, the first component being larger than the second component.

Applicants respectfully submit that Miller does not disclose, teach, or even suggest each limitation of claim 2. For instance, Miller does not disclose, teach, or even suggest a MEMS structure comprising a platform connected with a set of bimorph flexures, wherein each bimorph flexure comprises a first layer comprised of a first material and a second layer comprised of a second material, each bimorph flexure having a curvature resulting from a first component proportional to the difference in IRS characteristics of the first and second materials and a second component proportional to the difference in CTEs of the first and second materials, the first component being larger than the second component.

The Examiner cites column 7, lines 59-65 and the flexible members 16 (FIG. 1) of Miller as disclosing flexures 16 made of two layers, such as silicon nitride and polysilicon. However, column 7, line 55 to column 8, line 33 of Miller states that:

...substrate 12 can be *initially coated* with dielectric isolation films of low-pressure chemical vapor deposition (LPCVD) *silicon nitride*... The first patterned layer of *polysilicon* (termed Poly-0) is generally used to form electrical interconnections... and to form ground planes as needed (e.g. underlying the platform 14, the *flexible member 16*, and the elevation members 66)... Up to four additional *polysilicon* layers can be used as

mechanical (i.e. structural) layers to build up the structure of the apparatus
10... Each *flexible member 16* can be formed from a third structural layer of
polysilicon (termed Poly-3)...

[Emphasis added.]

5 As such, the silicon nitride disclosed in Miller is simply used as a *coating* on the substrate
and is not used to form any of the components of the MEMS apparatus in Miller. Rather, Miller
discloses that only a *polysilicon* layer is used to form the flexible member 16. Also, Miller does
not disclose that the polysilicon material used for the flexible member is formed under different
conditions to produce different IRS characteristics in the polysilicon. As such, the polysilicon
10 material used in Miller to create a flexible member does not have varying IRS characteristics.
Therefore, Miller does not disclose or suggested that a flexible member has a curvature resulting
from a first component proportional to the difference in IRS characteristics of the first and
second materials and a second component proportional to the difference in CTEs of the first and
second materials, the first component being larger than the second component, as required in
15 claim 2. In fact, Miller does not even discuss IRS characteristics or CTEs of the flexible
members.

For the above reasons, Applicants submit that claim 2 is patentable over the cited art.
Claims 4-5, 8, and 13 are dependent upon claim 2 and are allowable for at least the same reasons
as claim 2. Independent claim 14 is a method claim containing limitations similar to claim 2 (as
20 discussed above) and allowable for at least the same reasons as claim 2. Claims 16-21 are
dependent on claim 14 and allowable for at least the same reasons as claim 14.

III. Rejection Under U.S.C. 103(a)

In the Final Office Action, claims 6, 7, 11, and 12 were rejected under U.S.C. 103(a) as
being unpatentable over Miller. Claims 6, 7, 11, and 12 are dependent upon claim 2 and are
25 allowable for at least the same reasons as claim 2.

IV. New Claims 22-24

New claims 23 and 24 are dependent upon claim 2 and are allowable for at least the same reasons as claim 2. Claim 22 is dependent on claim 14 and allowable for at least the same reasons as claim 14.

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CONCLUSION

In view of the foregoing, it is submitted that the application is in condition for allowance. Reconsideration of the restriction and rejections are requested and allowance is earnestly solicited at the earliest possible date.

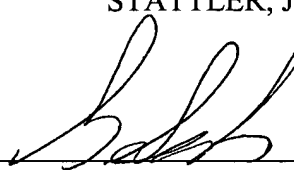
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Respectfully submitted,

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